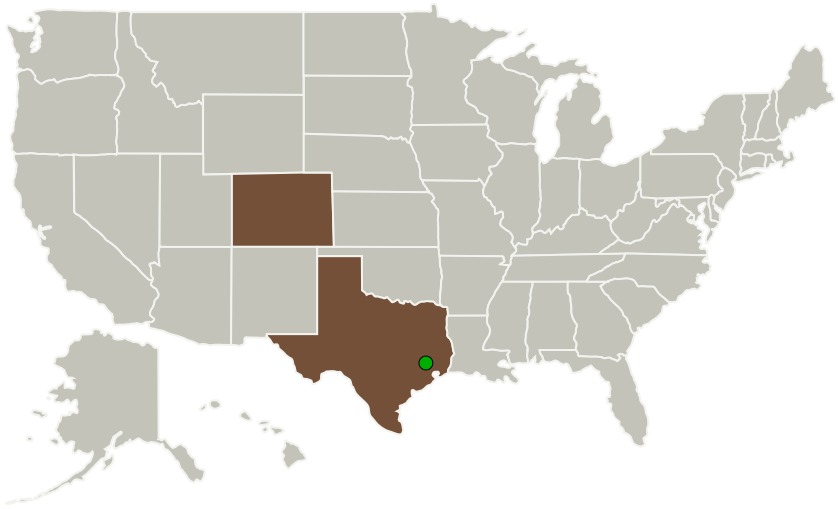
In-Situ Monitoring of Immune Function, Phase I

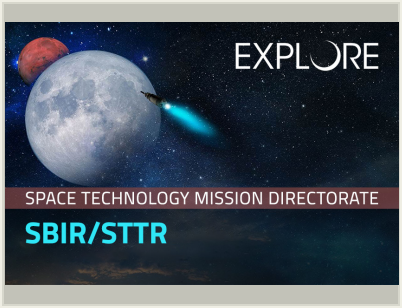
Completed Technology Project (2011 - 2011)

Project Introduction

Monitoring the health and wellness of mission pilots is a critically important function. Space flight has an adverse effect on the human immune response. During space flight the immune system weakens and some herpes viruses that are typically latent begin to appear in the saliva. Currently, saliva samples are taken in space and preserved for post flight assay. The presence of reactivated herpes virus in saliva samples is an indication of a weakening immune defense. RST Bioscience LLC proposes an innovative in flight assay to monitor the efficacy of the immune system in-situ. RST Bioscience has designed a test that is perfectly suited for space flight. The test will be small, light weight and easy to use. The sample used in this test will be saliva, which can be easily collected through non-invasive means. Results are delivered in minutes to hours. The test is sterile and disposable, used sample is contained and disposed of along with the disposable kit. There is no heavy equipment needed to process samples or read results. The kit is self-contained. Phase 1 will focus on assay development. In phase 2 we will build and test a prototype of the disposable delivery device.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
RST Bioscience	Lead Organization	Industry	Denver, Colorado
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Colorado	Texas

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138638)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

RST Bioscience

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

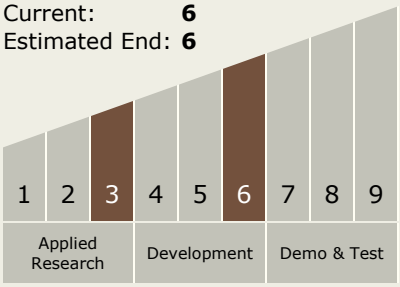
Carlos Torrez

Principal Investigator:

Robert E Harding

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.1 Medical Diagnosis and Prognosis

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System